PFP Recovery Update – February 14, 2018

Updated 1:30 p.m. PST

Updates since February 13, 2018 highlighted

The focus at PFP is on the health and safety of the workforce, addressing worker concerns, ensuring PFP remaining facility debris and rubble piles are stable, and mitigating the potential for any additional spread of contamination. CHPRC is not authorized to conduct any demolition work at PFP until DOE has been briefed and approves the recovery plan.

Plant Status

System/Area	Status
PFP Workforce	• No new safety issues.
PRF Area	• Area remains stable since last report.
PFP Property Area	• Heavy rain the morning of Feb. 14 delayed analysis of radiological surveys of "cookie sheets," because the wipes taken from the cookie sheets need to dry before they are analyzed for contamination. As of 12:30 p.m. on Feb. 14, no contamination was detected during cookie sheet surveys. • On Feb. 14, the PFP team entered office trailers inside the contamination area to retrieve employees' work-related items, and a team continues to build a tent under which PFP-controlled government vehicles will be decontaminated.

Radiological Surveys, Sampling and Analysis

- Surface monitoring: metal plates, called "cookie sheets," are placed throughout the work control area, usually near air monitors. The metal plates are checked with detectors, normally twice a day, for contamination. Any contamination detected is expressed in disintegrations per minute, a unit that measures how many radioactive atoms decay in a minute.
- Continuous air monitors (CAMs): stationary monitors are placed in or near the PFP demolition zone and provide real-time information about the level of airborne radioactivity. The monitors are set to alarm, allowing workers to take protective measures if there is an indication of airborne radioactivity. Filters may also be collected from the CAMs for analysis in a laboratory to provide additional information about any airborne radioactivity. Contamination values are expressed as derived air concentrations times hours (DAC-hours).
- Fixed air samplers: stationary monitors are placed around radiological boundaries to provide retrospective, not real-time, data about the presence and type of airborne radioactivity. The monitors are fitted with filters that are routinely collected for further analysis. Contamination values are expressed as derived air concentrations times hours (DAC-hours).

On-Site and Environmental:

Cookie Sheets (69 total)		
	Feb. 13 Day Shift	Feb. 13 Swing Shift
Number Surveyed	55	69
Number Clean*	55	69
Number Contaminated *(Note location and level)*	0	0

*Clean = direct contamination < 500 dpm/100cm² and removable contamination < 20 dpm/100cm² (or < 100 dpm/100cm² in a posted CA or HCA)

- **Continuous air monitor** readings (14 total): All CAMs reading less than 1 DAC-hr as of 12:30 p.m., Feb. 14.
- **Fixed air samplers** (24 total): Air filters removed and analyzed with no indication of radioactivity other than radon as of 11:00 p.m., Feb. 13.

Bioassays: Bioassays are used when a person is potentially exposed to contamination to determine whether or not there has been an intake (e.g., inhalation or ingestion) of radioactive material and results include an estimated dose. The table below provides a summary of bioassay results following the spread of contamination in December. The data shows radiological doses to personnel in millirem (mrem) and is current as of Feb. 13 at 4:40 a.m. This information will be updated as more results are received. Individual employees are briefed on their bioassay results as soon as the results are available.

Requested	281
Negative	212
Preliminary Positive*	4
Positive with Initial Dose Estimate Less than 1 mrem: 0 1-10 mrem: 4 10-20 mrem: 1	5
Positive with Verified Dose Assigned Less than 1 mrem: 1 1-10 mrem: 0 10-20 mrem: 0	1

*Preliminary Positive: Initial indication from laboratory of positive result with no dose estimate. Subject to change (to negative) as additional analysis is completed.

- Doses are the expected dose over 50 years.
- DOE requirements for protecting individuals from ionizing radiation set an administrative control level, or dose limit, of 100 mrem/year for non-radiological workers and members of the public visiting DOE sites (DOE Order 458.1). The DOE administrative dose limit for radiological workers is 500 mrem/year.

External:

- **Department of Health Web Page**: The Washington State Department of Health has set up a web page with environmental monitoring information about Hanford.

- **Government Vehicle Radiological Surveys:**
  - On Feb. 1, CHPRC completed requested surveys of four Hanford Fire Department (HFD) government vehicles. No contamination was detected.
  - Surveys of PFP-controlled government vehicles were completed Jan. 23. Decontamination and dispositioning of 27 contaminated vehicles is ongoing. Those vehicles remain in a radiologically-controlled area.

	Total
PFP-Controlled government vehicles surveyed	97
Decontaminated and returned to service	2

Contaminated and awaiting disposition (held as radiologically-controlled vehicles or decontaminated)	27
No contamination found and returned to service	68

- **Personal Vehicle Radiological Surveys**:
  - There have been no new requests for personal vehicle surveys since Feb. 1. Personal vehicle survey summary:
    - Dec. 26: Seven personal vehicles identified as contaminated by close of business Dec. 19 were decontaminated, surveyed and released as of Dec. 26
    - Jan. 26: One of seven original personal vehicles surveyed and released Dec. 26 (and remained on site since that time) was found to be contaminated; vehicle was decontaminated Jan. 28.
    - Jan. 31: One of seven original personal vehicles surveyed and released Dec. 26 (rental car) was resurveyed and found to be free of contamination
    - Feb. 1: Seven Hanford Fire Department personal vehicles surveyed; no contamination was found
- **Home Surveys:**
  - There have been no new requests for home surveys since Feb. 5. Home survey summary:
    - Dec. 20: Seven originally-requested home surveys complete with no contamination found.
    - Feb. 6: Requested survey of PFP employee's home completed with no contamination found.

Expert Panel: Members of the PFP Expert Panel continue to meet. The panel consists of federal, officials with expertise in several scientific and technical disciplines who can consult with industry and academic leaders with similar expertise. The panel will evaluate CHPRC's recovery from the contamination event and its proposed technical approach for safely completing demolition of PFP. The panel will provide observations and recommendations to CHPRC. The Expert Panel's charter and biographies of its members are available at www.Hanford.gov.

Causal Analysis: CHPRC is in the process of completing a root cause evaluation report that will identify the factors that led to the spread of contamination and that will propose corrective actions to reduce the likelihood of recurrence. Input from workers and Jacobs Engineering will be included in the root cause analysis.

Other Actions:

- Reviews of CHPRC's radiological control (RadCon) programs, including the company-wide and PFP RadCon programs, are underway. The reviews are being conducted by representatives from Jacobs Engineering (CHRPC's parent company) and Oak Ridge Associated Universities.
- Effective Feb. 13, items and materials leaving the PFP contaminated areas (CA) and high contamination areas (HCA) that are intended to be taken off the Hanford site will undergo a second, independent survey to verify they are free of contamination. CHPRC will also be including this requirement in its management directive related to release surveys. Additionally, workers who leave the PFP CA/HCA and radiological buffer area are already subject to increased survey rigor, which includes a survey performed by a radiological control technician instead of self-survey.
- Completed/ongoing oversight of PFP recovery actions includes the following:

- Ongoing oversight by Jacobs Engineering of CHPRC activities
- Ongoing oversight by DOE-RL of CHPRC activities
- Ongoing oversight by the Office of Environmental Management of DOE-RL and CHPRC activities
- Independent oversight of DOE-RL and CHPRC activities by the Office of Enterprise Assessments
- Review of actions and plans by the Expert Panel
- Management Self-Assessment of DOE-RL's oversight and qualifications of oversight personnel conducted by DOE-RL and DOE Office of Environmental Management personnel found:
  - A formal oversight program is in place, which is well organized, structured, and satisfactorily implemented at multiple levels.
  - Communication from the DOE-RL facility safety representatives and subject-matter experts flows up the management chain in a timely manner, and frequent communication between the safety and project organizations is evident.
  - Oversight personnel are well qualified and experienced based on interviews and a review of their qualification records.
  - Three observations identified:
    - Since the Air Dispersion Model (ADM) was not a requirements document, DOE-RL oversight personnel had no regulatory authority to drive contractor evaluation and documentation of proposed changes through the appropriate technical authority.
    - The contamination events between Nov. 28, 2017, and Dec. 15, 2017, appear to have been evaluated as discrete events as opposed to trends that may have shared a common cause.
    - Multiple long-standing vacancies within the safety and project organizations were noted.

Workforce Management:

- The workforce remains committed to the current mission of hazard recognition and control despite the challenging situation.

Communications:

- During the week of Feb. 12, CHPRC leadership will brief Mission Support Alliance employees on recent PFP events during a safety meeting open to all MSA employees. CHPRC will also host an all-hands meeting for PFP employees this week.